High-Mu Triode—Beam Power Tube

NOVAR TYPE

For Combined Vertical-Deflection Oscillator and Amplifier Service in TV Receivers

Electrical:

Heater Characteristics and Ratings:

Voltage (AC or DC)	6.3 ± 0.6	volts
Current at heater volts = 6.3	1.100	amp
Peak heater-cathode voltage (Each unit):		
Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200[a] max.	volts

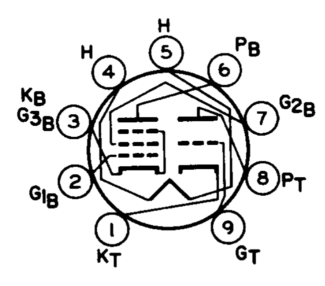
Direct Interelectrode Capacitances (Approx.):[b]

Triode Unit:		
Grid to plate	0.44	pf
G_T to (K_T,H)	15.0	pf
P_T to (K_T,H)	7.0	pf
Beam Power Unit:		
Grid No.1 to plate	0.048	pf
$G1_B$ to (K_B+$G3_B$,$G2_B$,H)	2.6	pf
P_B to (K_B+$G3_B$,$G2_B$,H)	0.28	pf

Mechanical:

Operating Position	Any
Type of Cathodes	Coated Unipotential
Maximum Overall Length	2.380"
Seated Length	1.750" to 2.000"
Diameter	1.062" to 1.188"
Dimensional Outline	See *General Section*
Bulb	T9
Base	Small Button Novar 9-Pin with Exhaust Tip (JEDEC No.E9-89)
Basing Designation for BOTTOM VIEW	9QT

Pin 1 - Triode Cathode
Pin 2 - Beam Power Grid No.1
Pin 3 - Beam Power Cathode & Grid No.3
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Beam Power Plate
Pin 7 - Beam Power Grid No.2
Pin 8 - Triode Plate
Pin 9 - Triode Grid



Characteristics, Class A$_1$ Amplifier:

	Triode Unit	*Beam Power Unit*			
Plate Voltage	250	50	135	120	volts
Grid-No.2 Voltage	–	120	120	*Connected to plate at socket*	volts
Grid-No.1 Voltage	–3	0	–10	–10	volts
Amplification Factor	64	–	–	7	

	Triode Unit		Beam Power Unit		
Plate Resistance (Approx.).	40000	–	18000	–	ohms
Transconductance.	1600	–	8400	–	μmhos
Plate Current	1.4	170[c]	39	–	ma
Grid-No.2 Current	–	20[c]	3	–	ma
Grid-No.1 Voltage (Approx.) for plate ma = 1	–	–	-24	–	volts

VERTICAL-DEFLECTION OSCILLATOR *(Triode Unit)*

Maximum Ratings, *Design-Maximum Values:*

For operation in a 525-line, 30-frame system[d]

DC Plate Voltage.	330 max.	volts
Peak Negative-Pulse Grid Voltage.	400 max.	volts
Peak Cathode Current.	77 max.	ma
Average Cathode Current	22 max.	ma
Plate Dissipation	1.5 max.	watts

Maximum Circuit Values:

Grid-Circuit Resistance: For grid-resistor-bias operation. . . .	2.2 max.	megohms

VERTICAL-DEFLECTION AMPLIFIER *(Beam Power Unit)*

Maximum Ratings, *Design-Maximum Values:*

For operation in a 525-line, 30-frame system[d]

DC Plate Voltage.	300 max.	volts
Peak Positive-Pulse Plate Voltage[e]. . . .	2000 abs.max.	volts
DC Grid-No.2 (Screen-Grid) Voltage. . . .	150 max.	volts
Peak Negative-Pulse Grid-No.1 (Control-Grid) Voltage.	250 max.	volts
Peak Cathode Current.	200 max.	ma
Average Cathode Current	70 max.	ma
Plate Dissipation	12 max.	watts
Grid-No.2 Input	1.9 max.	watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance: For grid-resistor-bias operation. . . .	2.2 max.	megohms

[a] The dc component must not exceed 100 volts.

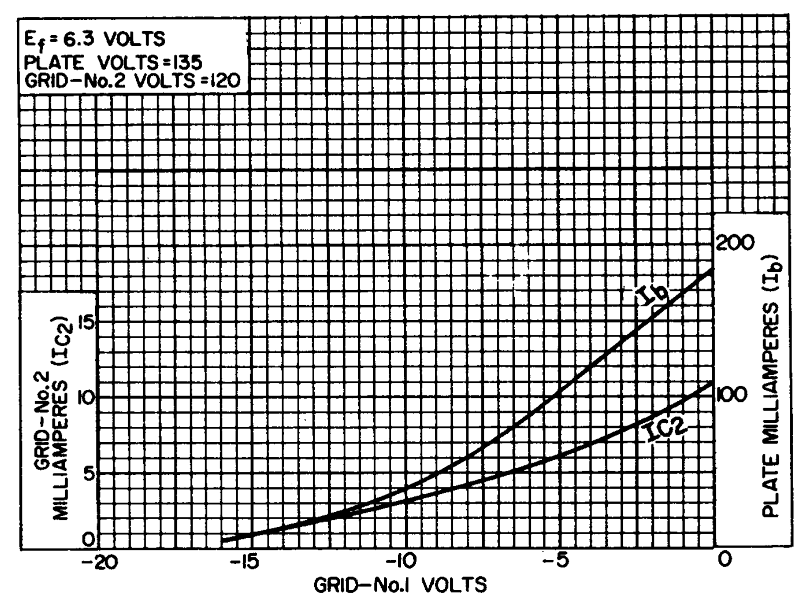
[b] Without external shield.

[c] This value can be measured by a method involving a recurrent wave form such that the plate dissipation and grid-No.2 input will be kept within ratings in order to prevent damage to the tube.

[d] As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.

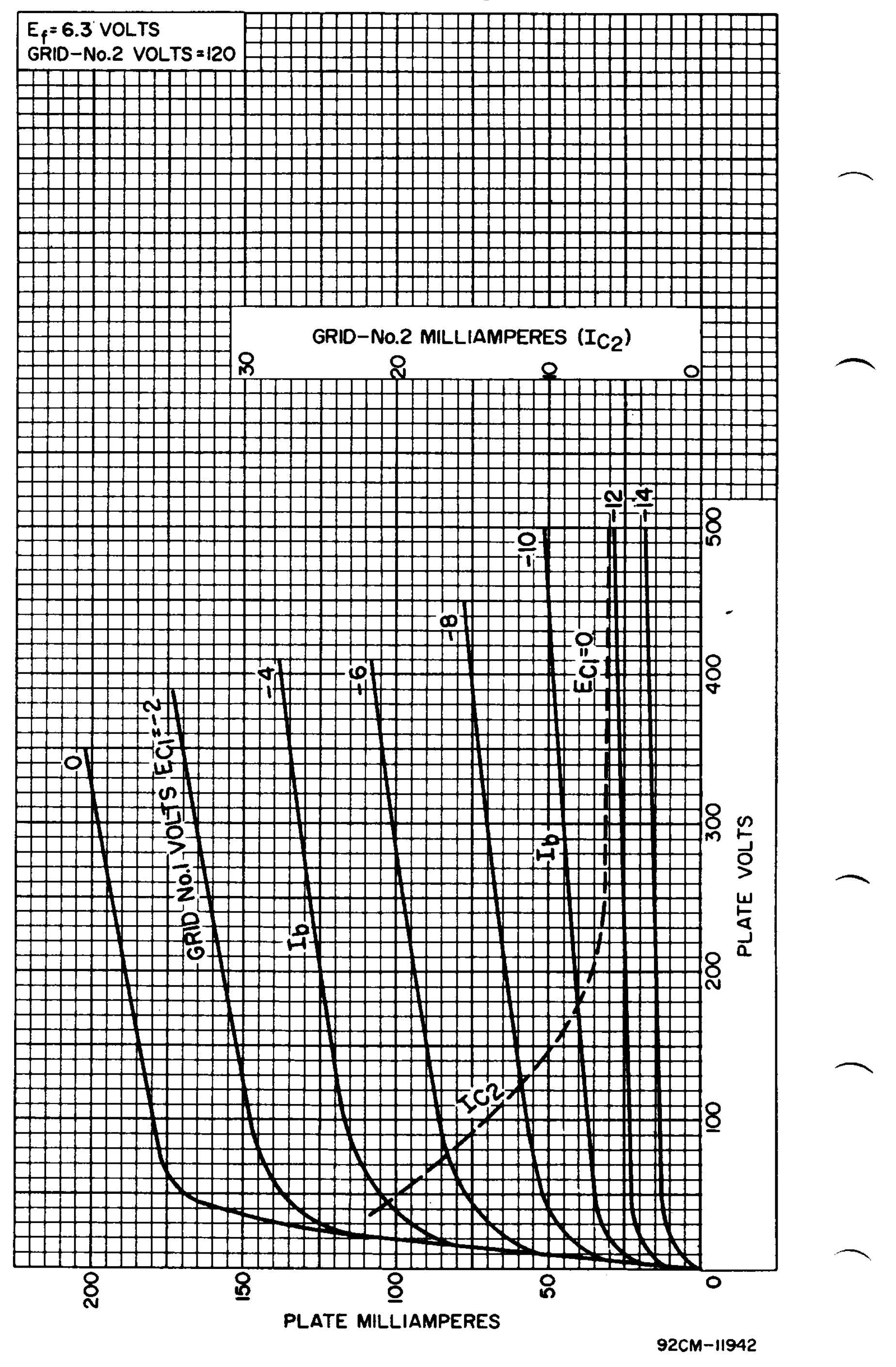
[e] This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one vertical scanning cycle. In a 525-line, 30-frame system, 15 per cent of one vertical scanning cycle is 2.5 milliseconds.

AVERAGE CHARACTERISTICS
Beam Power Unit

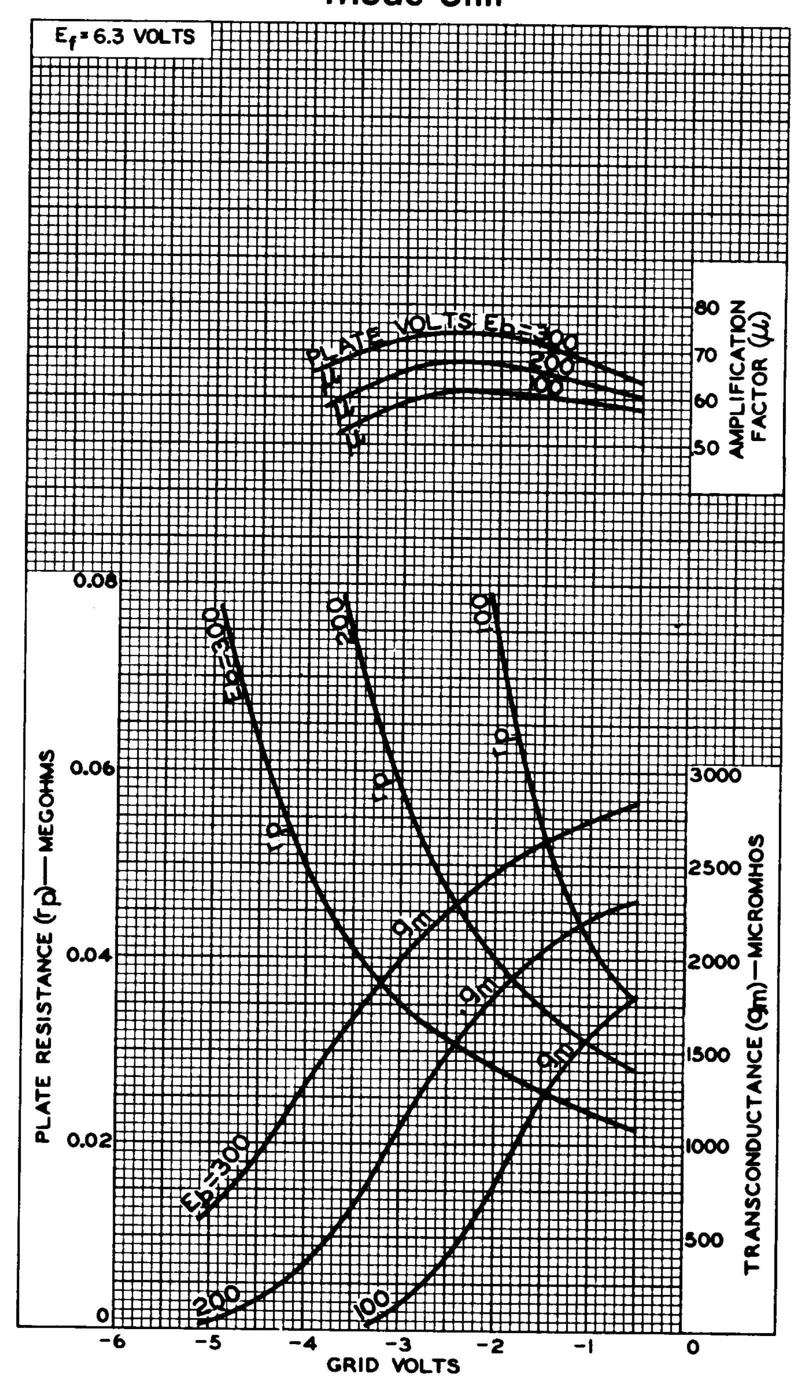


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Beam Power Unit

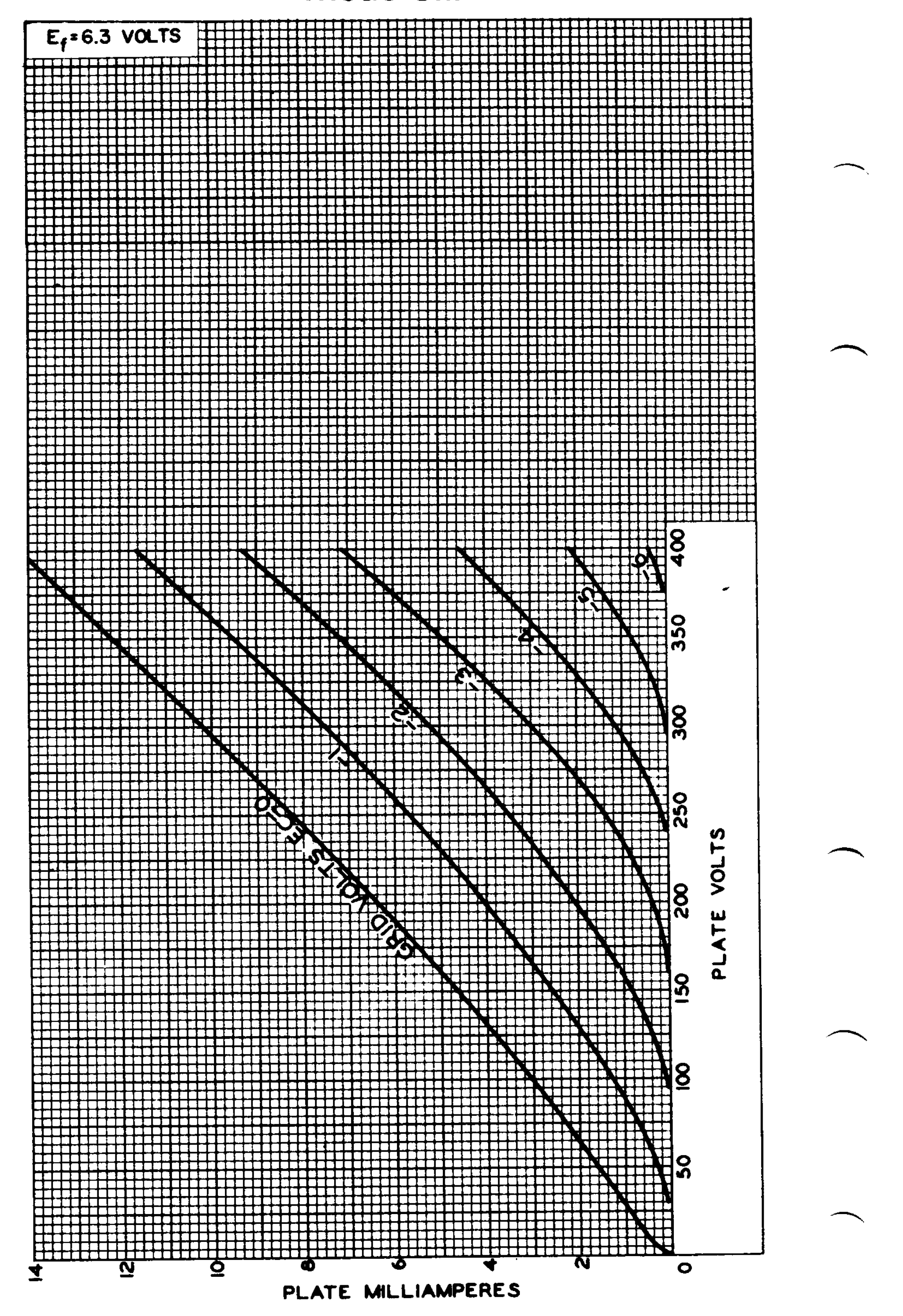


AVERAGE CHARACTERISTICS
Triode Unit



92CM-11945

AVERAGE CHARACTERISTICS
Triode Unit



92CM—11944